156702

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

FEB 13 1985

5HE-12

Mr. Sam McWilliams
Plant Manager
Ethyl Petroleum Additives
Sauget, Illinois 62201

Dear Mr. McWilliams:

This letter addresses the plans required in Administrative Order V-W-84-007 issued to Edwin Cooper Division on May 17, 1984.

Under paragraph 12C of the Order, Edwin Cooper was required, in part, to submit a sampling plan for determining the lateral and vertical extent of 2,3,7,8 tetrachlorodibenzo-p-dioxin (2,3,7,8 TCDD) contamination at the Sauget, Illinois facility. Edwin Cooper submitted a letter on June 25, 1984, which included a proposal for determining the lateral and vertical extent of 2,3,7,8 TCDD contamination.

By a September 24, 1984, letter to Plant Manager, Sam McWilliams from Dan Hopkins, On Scene Coordinator, the U.S. EPA stated its intent to approve Edwin Cooper's June 25, 1984, proposal with modifications pursuant to paragraph 12D of the Order. In this letter, U.S. EPA provided Edwin Cooper the opportunity to confer prior to final modification and approval of the plan. Edwin Cooper met with U.S. EPA on December 17, 1984, to discuss the plan and U.S. EPA's modifications. On the basis of this meeting, U.S. EPA has made certain changes to its September 24, 1984, proposed modifications, and today approves the enclosed plan (Attachment A). Accordingly, the plan in Attachment A hereby is deemed a part of the Order and becomes binding upon Edwin Cooper pursuant to paragraph 12D of the Order.

The goals of this sampling plan are to: 1) characterize the lateral and vertical extent of 2,3,7,8 TCDD and other similar dioxin and furan compounds to 1 part per billion (ppb) in soils on site, and 2) determine the potential for future release of these compounds.

The sampling plan in Attachment A identifies specific locations and specific depth where samples are to be taken. If results of the sample analyses show that this sampling plan does not characterize the extent of dioxin/furan compound contamination to 1ppb, additional samples may be needed.

Under paragraph 12C (iii) of the Order, Edwin Cooper was required to complete plans for identifying and locating all used and unused sewer lines, buried pipe and equipment which may be contaminated with 2,3,7,8 TCDD. Under paragraph 12C (iv) of the

Order, a study of topographic conditions for the purpose of determining surface water runoff at the facility was required. A schedule for the requirements of paragraph 12C is specified in Attachment B of this letter.

Ethyl Petroleum Additives (Ethyl) identified several current construction projects and a description of unplanned repair projects to U.S. EPA in a letter dated December 21, 1984, from Mr. Sam McWilliams. Attachment C identifies the manner in which the current construction projects may proceed according to paragraph 12E of the Order. I understand that, from time to time, unexpected emergencies arise which may necessitate the removal or repair of facilities such as sewer lines, water lines, gas lines, etc. These emergency repairs may involve the unearthing and handling of soils which cover such facilities. Contaminate (e.g. dioxin compounds) migration, during an emergency, may be enhanced due to an underground leakage problem. Unforeseen emergencies, such as those described above, may be undertaken without prior notice to U.S. EPA.

Since a complete characterization of dioxin/furan soil contamination is not available at this time, U.S. EPA will consider the following plant area to be significantly contaminated: From 700 N. (east border) to 1100 N. (west border) and from 200 E. (north border) to 700 E. (south border). If emergency repairs or removals are required outside of the above described area, Ethyl may proceed with the repairs or removals as it sees fit. In the event the emergency repairs are needed within the above described area, Ethyl must exercise practices to 1) minimize the release of dust into the air during the repair activities, and 2) minimize the amount of soil which leaves the significantly contaminated area, and 3) replace unearthed soil back into its original location to the extent possible. In addition, the company must notify the U.S. EPA Region V office within 5 days of the discovery of the emergency. Such notice should include the date of the emergency, the affected facilities and a brief description of the response activities. When a complete characterization of dioxin/furan contaminates becomes available, more appropriate boundaries of the significantly contaminated area can be determined. For emergency repair work, within the significantly contaminated area, U.S. EPA will not dictate what personal protective equipment is necessary for repair work. It is recommended that if dust generation is expected, respiratory protection be used which is consistent with that identified in Edwin Cooper's Health and Safety Plan dated May 21, 1984.

Sincerely yours,

Robert Springer for

Valdas V. Adamkus
Regional Administrator

ATTACHMENT C

Current Construction Projects

Ethyl Petroleum Additives (Ethyl) has identified 14 construction projects at the Sauget Plant that they wish to proceed with. These projects may involve unearthing or disturbing on-site soils which may be contaminated with 2,3,7,8 TCDD. The areas of the plant which may be affected by these projects have been identified as Areas A through N on a blueline drawing (Drw. No. D. - 21880) submitted by Ethyl;

Some construction projects are located in portions of the plant where 2,3,7,8 TCDD contamination has been confirmed. Other projects are located a considerable distance from confirmed areas of contamination. The areas of construction have been grouped as follows:

Group I project areas: Areas A,B,C,D,E,F,M, and N

Group II project areas: Areas G,I,J,and H

Group III project areas: Areas K and L.

The Group I areas are located a considerable distance from portions of the plant which are anticipated to be contaminated with dioxins. Although dioxin contamination is not expected in the Group I areas, it is important to ensure that the movement of dioxin contaminated soils is restricted. Projects which are located in Group I areas may proceed according to paragraph 12E of the Order provided that the following requirements are met;

1) Generation of dust during any project activity is minimized, and
2) Movement of soils excavated from the project area is accomplished with

a minimum of spillage or dust generation, and

3) Soils which are uncovered during project activities are completely covered with a high quality material which is undamaged and without tears. The covering must be secured in such a manner to ensure its effectiveness in adverse weather conditions and in general will minimize migration of the soil. This cover will be necessary unless Sufficient analysis of soils within the project area occurs prior to the construction project, and the results indicate that no contamination of 2,3,7,8 TCDD exists at one ppb or greater,

and

4) Excavated soils from the project area which are relocated within the plant are placed so that the soils from a specific project area can be readily identified. This will be necessary unless the soils from the specific project area have been analyzed prior to the relocation and the soils are not contaminated with 2,3,7,8 TCDD to one ppb or greater,

and

5) no excavated soils from any project area can be transported from the Sauget plant site.

The Group II areas are located much closer to known areas of 2,3,7,8 TCDD contamination. Projects may proceed in these areas in accordance with paragraph 12E of the Order provided that the following requirements are met;

1) All of the requirements identified for Group I project areas, and

2) not withstanding the requirements of the Group I project areas, project activity which would cause soils to be uncovered or excavated must occur in conformance with Edwin Cooper's Health and Safety plan which was

amended by U.S. EPA in the 5/25/84 letter from Valdus Adamkus to Sam Mc Williams, unless sufficient analysis of the soil shows that no contamination of 2,3,7,8, TCDD exists in the soil at one ppb or greater.

The Group III areas are located in soils known to be contaminated with significant concentrations of 2,3,7,8 TCDD. Until further characterization of the extent of contamination is known, the projects in these area must proceed with a site specific proposal for each project. It is anticipated that these projects will require similar considerations as those which were given for the Unit 268 and Track 21 projects. Proposals for these projects will need to address health and safety concerns, provisions for restricting the movement of soils, decontamination, and disposition of contaminated soils and material. Sampling and analysis may be needed to characterize the extent of contamination of soils and other materials.

ATTACHMENT B

Tasks identified in paragraph 12C of Administrative Order V-W-84-007

	TASK	COMPLETION DATE
12C i)	Characterize the extent of 2,3,7,8 TCDD contamination laterally (surface) and vertically as identified in Attachment A of this letter	June 30, 1985
12C iii)	Determine the location of all used and unused sewer lines, buried pipe, and equipment which may be contaminated with 2,3,7,8 TCDD	March 15, 1985
12C iV)	Complete topographic map which identifies two foot graduations in surface elevation	March 15, 1985
	Complete the analysis of samples to determine the concentrations of tetra through octa chlorinated dibenzo-dioxins and furans in soil as identified in Attachment A of this letter.	September 1, 1985

ATTACHMENT A

Sampling Plan at Ethyl
Petroleum Additive Plant,
Sauget, Illinois

The goals of this plan are to 1) characterize the lateral and vertical extent of dioxin and furan compounds in soils on site, and 2) to determine the potential for future release of these compounds from the site. The plan addresses these subjects:

1) specific sample locations

2) chemicals to be analyzed

3) sampling equipment and procedures to be used

4) protocol for sample handling and analysis.

1) Specific soil sampling locations

In the September 24, 1984, letter from Dan Hopkins to Sam McWilliams, a blue line drawing of the Edwin Cooper Division (Dwg No. D-21880) was included as Attachment One. Sample locations identified by the letters A through U were identified on this drawing. Attachment Two of the above mentioned letter, identified the depth to which samples were to be taken from each location. With the exception of the following modifications, the sample locations and depths as described in these attachments are incorporated into the sampling plan by reference. The following modifications apply;

a) Sampling at location D is to be performed in the immediate vicinity of the sewer system sample collected on 4/27/84. Three soil samples are to be taken at this location at the following depth intervals; 0-6 inches, 12-18 inches, 24-30 inches.

b) Sampling location L can be relocated east of the location shown on the blue line drawing, so that sampling through cement is avoided.

c) Sample location N is to be relocated to a position as near as possible to the previous sample location identified as #1 of the 12/8/83 sampling effort.

d) Sample location O is to be relocated to a position as near as possible to the previous sample location identified as #12 of the 4/27/84 sampling effort. Only one sample at a depth interval of 12" - 18" is required.

Table 1 describes soil sample location and depth.

2) Chemicals to be analyzed

Each of the 46 samples to be collected must be analyzed for 2,3,7,8 TCDD at a detection limit of approximately 0.3 ppb. In addition, one sample from each of the following locations must be analyzed for tetra-through octa-chlorinated dibenzo dioxins and tetra-through octa-chlorinated dibenzo furans at a detection limit of 0.3 ppb or more sensitive; locations A,B,C,D,E,F,G,I,K, and U. The depth of each of the samples to be analyzed for total dioxin and furans is to be the depth interval which represents the highest concentration of 2,3,7,8 TCDD as indicated by the sample analyses described in the first sentence of this paragraph. If any of the 10 above mentioned sample locations show no detectable 2,3,7,8 TCDD, at any depth interval tested, the appropriate depth interval for total dioxin and furan analysis is the 12 to 18 inch depth sample.

TABLE 1

Soil sample locations to be analyzed for 2,3,7,8 TCDD

Sample Location (Note 1)	Approximate Depth of Core	Location of Previous Sample	Samples Need for Location	Depth Of Samples (from surface)
A	5 ft	Yes	3	24-30 inches 36-42 inches 48-54 inches
B	5 ft	Yes	4	12-18 inches 24-30 inches 36-42 inches 48-54 inches
C	5 ft	Yes	3	24-30 inches 36-42 inches 48-54 inches
D	3 ft	No	3	0-6 inches 12-18 inches 24-30 inches
E	18 inches	Yes	1	12-18 inches
F	3 ft	Yes	2	12-18 inches 24-30 inches
G	18 inches	Yes	1	12-18 inches
H	3 ft	No	3	0-6 inches 12-18 inches 24-30 inches
I	3 ft	Yes	2	12-18 inches 24-30 inches
J	18 inches	No	2	0-6 inches 12-18 inches
K	18 inches	No	2	0-6 inches 12-18 inches
L	3 ft	No	3	0-6 inches 12-18 inches 24-30 inches
M	18 inches	No	2	0-6 inches 12-18 inches

TABLE 1

Soil Sample Locations to be analyzed for 2,3,7,8 TCDD

Sample Location (Note 1)	Approximate Depth of Core	Location Of Previous Sample	No. Samples Per Location	Depth Of Samples (from surface)
N	18 inches	Yes	1	12-18 inches
O	18 inches	No	2	0-6 inches 12-18 inches
P	18 inches	Yes	1	12-18 inches
Q	18 inches	No	2	0-6 inches 12-18 inches
R	18 inches	No	2	0-6 inches 12-18 inches
S	18 inches	Yes	1	12-18 inches
T	6 inches	No	1	0-6 inches
U	5 ft	No	5 (note 2)	Note 2,

NOTE 1 - The letter designations refer to attachment One (Dwg No. D-21880) of the 9/24/84 letter to McWilliams from Hopkins.

NOTE 2 - Sample Location U is to be represented by five cores. Soil samples from each core should be collected from the following depths; 0-6 inches, 12-18 inches, 24-30 inches, 36-42 inches, and 48-54 inches. Samples of each core from similar depths are to be composited to form 5 samples to be analyzed. Each sample will represent a similar depth interval from 5 locations as indicated on the blueline drawing. Depths intervals for location U are to be measured from the surface of the fill material located below the crush rock/sand/plastic cover.

3) Sampling equipment and procedures to be used

Edwin Cooper submitted a quality assurance plan entitled Envirodyne Engineers Quality Assurance Program and Sampling Protocols dated 3/2/84 to Region V EPA. This quality assurance plan contained a document entitled Determination of 2,3,7,8 -TCDD in Soil and Sediment (revised September, 1983). Appendix A of this document which is identified as Sample Collection Procedure is approved, with, the following clarification, for collection of soil samples which are to be analyzed for 2,3,7,8 TCDD or total dioxin and furan compounds. Each soil sample is to be collected by using a split spoon sampler.

4) Protocol for sample handling and analysis

A) Sampling handling - each soil sample collected is to be placed into an eight ounce size, wide mouth, amber glass jar. The glass jar must be fitted with screw lids lined with Teflon. If amber jars are not available, clear glass jars may be substituted if sample exposure to light is minimized. Each jar must be cleaned prior to use as a sample container using the following procedure;

1) Rinse with tap water
2) Rinse with deionized water
3) Rinse with pesticide-grade acetone
4) Rinse with pesticide-grade hexane
5) Air dry
6) Bake at 150°C for at least two hours.

At least 4 ounces of soil must be collected per sample. For each batch of samples (up to 20 samples) a field blank and a field duplicate must be provided.

Field blanks are to be handled in an identical manner as soil samples (e.g. similar contact with sampling implements, rinsing with the same solvent during extraction procedures, etc.) except that there will be no soil in the field blanks. The following table identifies sample locations for which a field duplicate must be taken.

Field Duplicate Samples

Sample Location	Duplicate Analysis	Sample Depth
A	2,3,7,8 TCDD	24 - 30 inches
C	2,3,7,8 TCDD	24 - 30 inches
U	2,3,7,8 TCDD	24 - 30 inches
A	Total dioxin and furan	24 - 30 inches

The Sample packing procedures, identified as Appendix B of the document Determination of 2,3,7,8 - TCDD in Soil and Sediment (revised September 1983) included with Edwin Cooper's quality assurance plan is approved for packing samples.

B) Sample Analysis - Samples, blanks and duplicates are to be analyzed according to Attachment D of this letter which is entitled Statement of Work Dioxin analysis 9/15/83. This method is referred to as the IFB method.